Work Order ID 71328

Tuesday, June 28, 2011 10:14:57 AM

Item ID: D412-742-043 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 7/27/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** MF **Date:** 11-06-28 **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D3391	Rev H								
100	DOCUMENT CONTROL	0.00							
DC									
Document Control	**Memo** If D412-742-043 is a W/O on it's own, Photocopy bluefile and create labels per PPP D412-742-043 CHG004	0.00							

N/A

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 71328

Tuesday, June 28, 2011 10:14:57 AM

Item ID: D412-742-043 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 7/27/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110		0.00							
HandFinish	HandFinishing					1	ϕ		JW 11/09/25
Hand Finishing	**Memo**	0.00							

1-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using 7/16" "T" Pins.
A/R□□Sikaflex-241/-291□ 1118393
Expiry date:□ 12-05

2-Install wearplates as per Dwg D3391. Ensure that plastic washers are against wearplate, then topped with the SS washer. Seal all bolts with sikaflex exept ones with inserts on inside of tube ,hand tighten only bolts with no sikaflex.

A/R□□Sikaflex-241/-291□ 1118393
Expiry date:□ 12-05

3-Remove "T" pins once sikaflex is dry.

4-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.
A/R□□LPS Procyon□ 1114596

PTO →

Dart Aerospace Ltd

W/O:	71328	WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D205-742-043 PAR #: N/A Fault Category: ~~Heavy Fear~~ ~~Shell Holes~~ / Finishing NCR: Yes / ~~No~~ DQA: [illegible] Date: 11.10.03

11.8.10 Resolution: Re work Disposition: Rework QA: N/C Closed: CK Date: 11/10/04

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B: Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector
11.09.28	110	Aft saddle holes wouldn't allow installation of saddle bushings R.C. Process	CP 11.09.28 [illegible]	Acceptable to file inner hole to allow installation	[illegible] 11/09/28 X1	S 11/09/28	CP 11.09.28 [illegible]	S 11/09/28

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Work Order ID 71328

Tuesday, June 28, 2011 10:14:57 AM

Item ID: D412-742-043 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 7/27/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
130		0.00							
Packaging	Packaging								
Packaging	Memo	0.00							
	Identify and pack for shipping as per PPP D412-742-043 Location:_____ PPP Rev: PPP 71327								
140	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

Julian/28

11/9/29

11/9/29

MF 11-09-29

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, June 28, 2011 10:14:53 AM

4

Work Order ID: 71328

Parent Item: D412-742-043

Parent Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Required Date:** 7/27/2011

Start Qty: 1.00 **Required Qty:** 1.00

Comments:
IPP Rev A□05.10.13□New Issue□ KJ/JLM□
IPP Rev B□06.02.13□ECN 773 dwg @ rev.D EC
IPP Rev:C 07-05-28 As per Rev F JLM
IPP Rev:D 07-12-04 ECN 1072 DD verified by:JLM
IPP Rev:E 08-09-08 ecn 08-510 DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3C4A BOLT		Purchased	No			110	Each	2,162.000	24	24 JL 11/09/28			

Location		Loc Qty	Loc Code	
ST350		2162	M118983	X24
	117313	2		
	117688	776		
	117795	500		
	117872	22		
	118012	500		
	118112	362		

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3C6A BOLT		Purchased	No			110	Each	264.0000	12	12 JL 11/09/28			

Location		Loc Qty	Loc Code	
FP-A		1		
	111982	1		
ST351		263		
	111982	2		
	116419	23		
	116549	2		
	116704	12		
	117514	24		
	117619	50		
	117688	100		
	117872	50		X12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, June 28, 2011 10:14:53 AM

Work Order ID: 71328

Parent Item: D412-742-043

Parent Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Required Date:** 7/27/2011

Start Qty: 1.00 **Required Qty:** 1.00

AN3C7A BOLT		Purchased	No	110	Each	135.0000	8	8	M 11/09/28

Location	Loc Qty	Loc Code	
ST351	123		
113149	14		
116169	1		
117313	58		
117688	50		
ST352	12		X8
117619	12		

AN960C10L washer	NAS1149C0332R	Purchased	No	110	Each	0.0000	44	44	(XIII) M 11/09/28
D3391-021 Fwd Tube Assembly		Manufactured	No	110	Each	0.0000	1	1	B71324 (X1) M 11/09/28
D3391-023 Mid Tube Assembly		Manufactured	No	110	Each	0.0000	1	1	B71330 (X1) M 11/09/28
D3391-025 Aft Tube Assembly		Manufactured	No	110	Each	0.0000	1	1	B71320 (X1) M 11/09/28
D3564-1 Wearshoe		Manufactured	No	110	Each	2.0000	1	1	M 11/09/28

Location	Loc Qty	Loc Code	
FG	2	B72508	X1
33798	2		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, June 28, 2011 10:14:54 AM

Work Order ID: 71328

Parent Item: D412-742-043

Parent Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Required Date:** 7/27/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3564-3	Manufactured	No	110	Each	12.0000	1	1	
Wearshoe								M 11/09/25

Location	Loc Qty	Loc Code	
FG	2		
33764	2		
FP019	10		
64748	3		
66000	4		
69290	3	B71656	X1

D3564-5	Manufactured	No	110	Each	26.0000	1	1	
Wearshoe								M 11/09/25

Location	Loc Qty	Loc Code	
FG	2		
34806	2		
FP019	24		
68960	2		
70864	22	B73330	X1

D3566-1	Manufactured	No	110	Each	12.0000	2	2	
Gasket								(X2) M 11/09/25

Location	Loc Qty	Loc Code	
FP015	12	B72848	X1
68924	2	B73303	X1
69279	10		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, June 28, 2011 10:14:54 AM

Work Order ID: 71328

Parent Item: D412-742-043

Parent Item Name: Replacement Float Skidtube

Start Date: 6/28/2011 **Required Date:** 7/27/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3566-5 Gasket	Manufactured	No	110	Each	18.0000	1	1		11/04/28

Location	Loc Qty	Loc Code	
FP015	18		
68961	18	B72849	XI

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

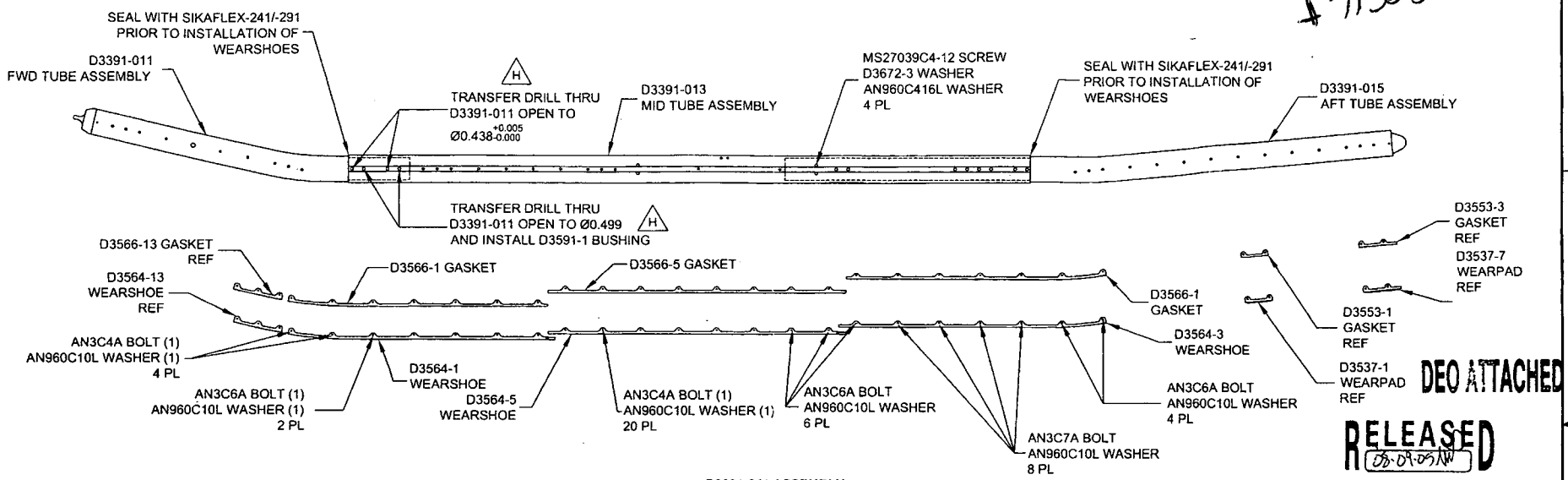
Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

+ 71328



DEO ATTACHED

RELEASED 08-09-05 AW

D3391-041 ASSEMBLY

REV.	DESCRIPTION	BY	DATE
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

H

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 1 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

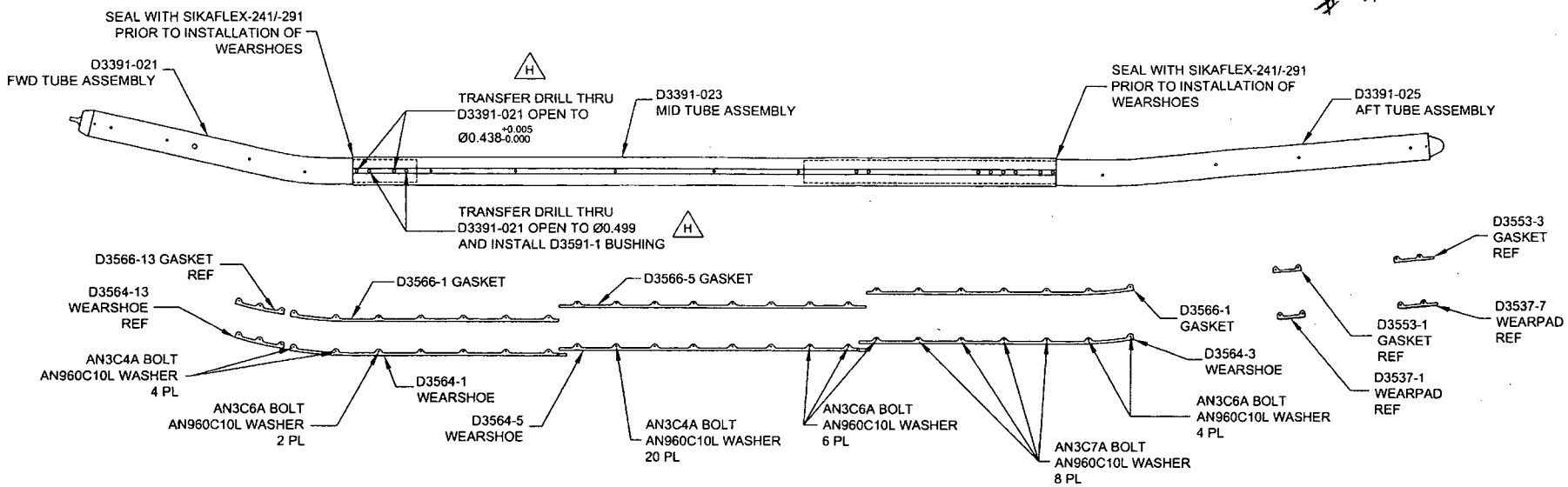
Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

71328



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

H

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

DEO ATTACHED

RELEASED 08.09.05

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AUS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 2 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

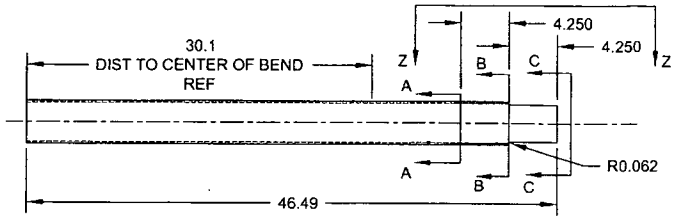
Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

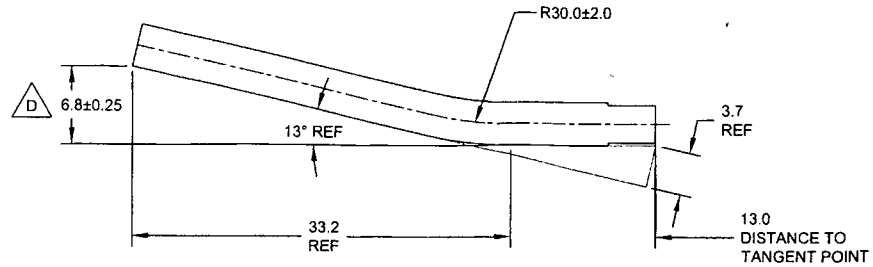
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

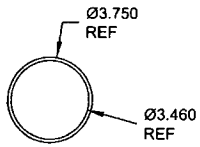


D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)

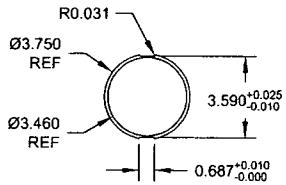


D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)

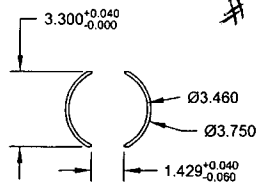
#71328



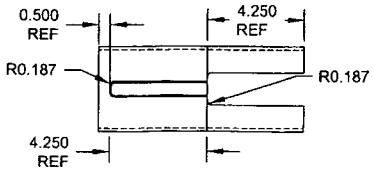
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

DEO ATTACHED

RELEASED 08-09-05 NW

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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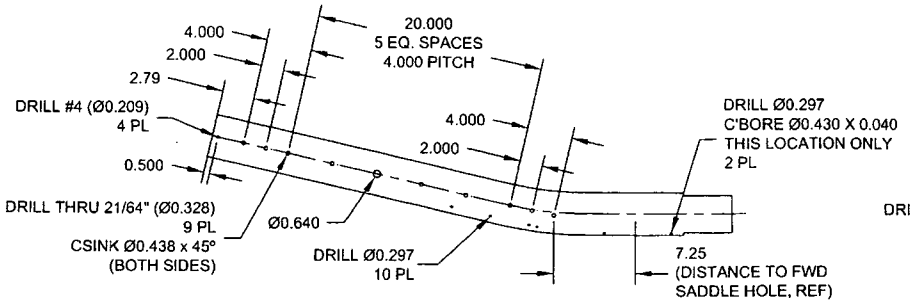
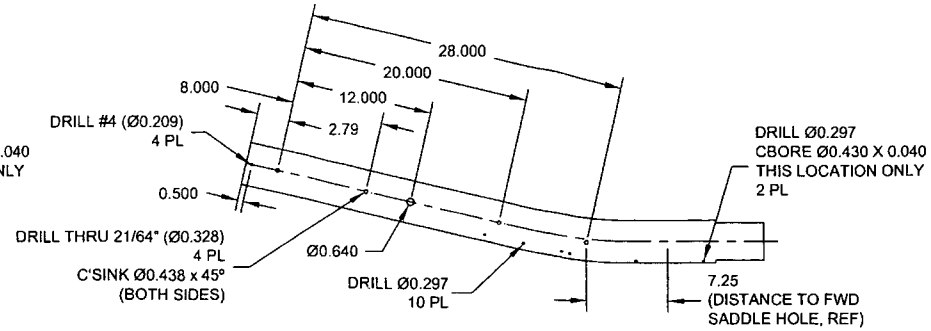
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

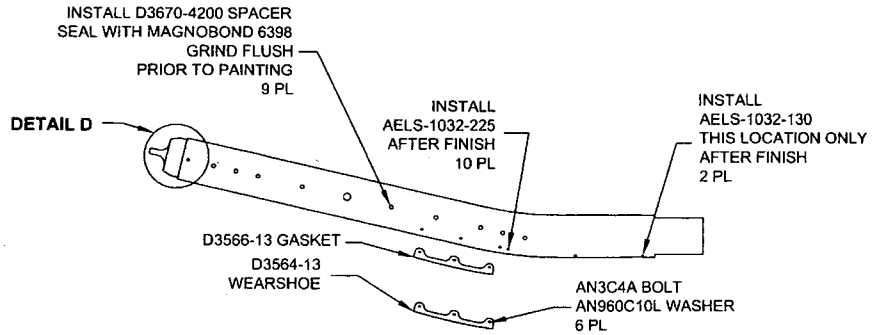
H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE



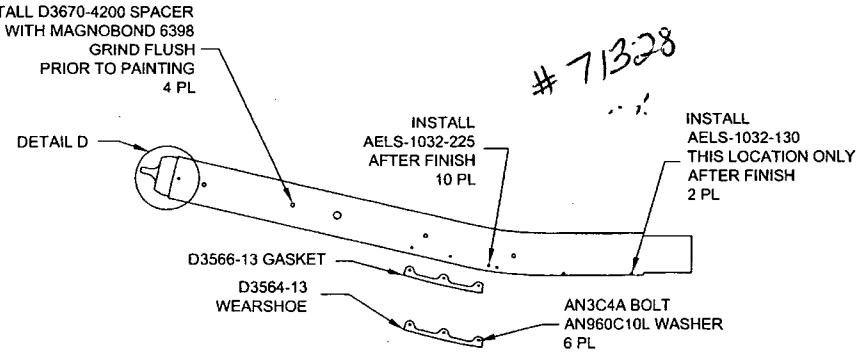
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL

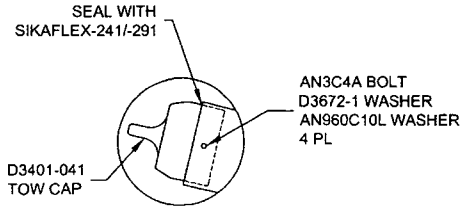


D3391-011 ASSEMBLY DETAIL



71328

D3391-021 ASSEMBLY DETAIL



DETAIL D
SCALE 2X

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

DEO ATTACHED

RELEASED 08.09.05 NW

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 4 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

Dart Aerospace Ltd

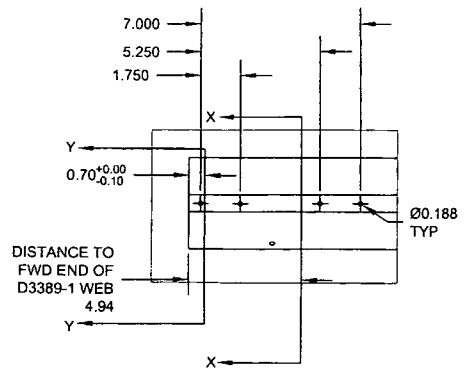
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

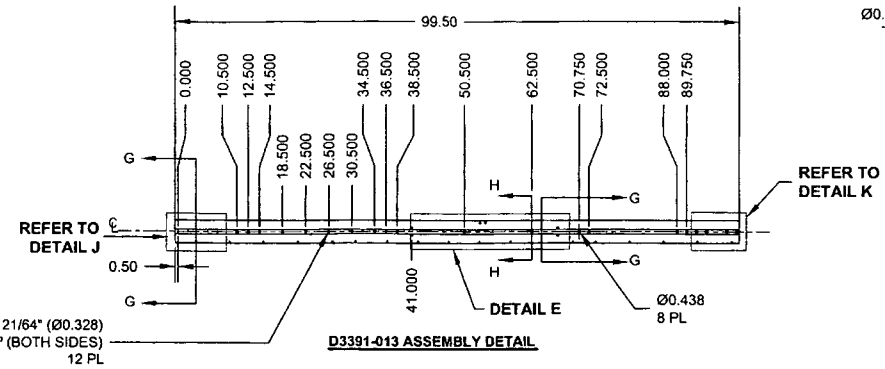
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

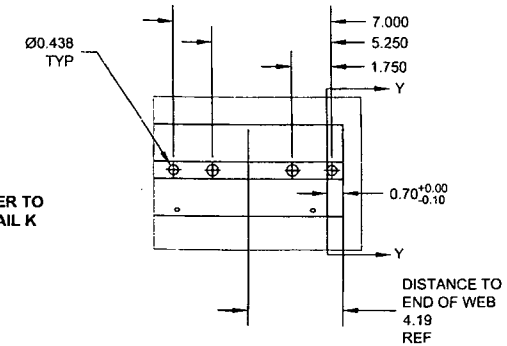
NOTE: Date & initial all entries



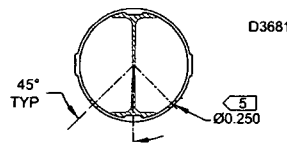
DETAIL J
SCALE 4X



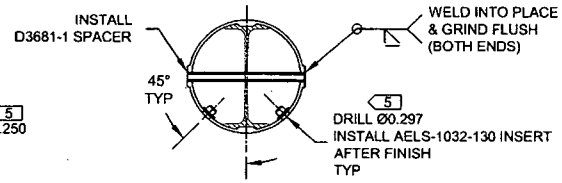
D3391-013 ASSEMBLY DETAIL



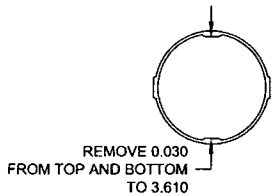
DETAIL K
SCALE 4X



SECTION G-G
SCALE 5X

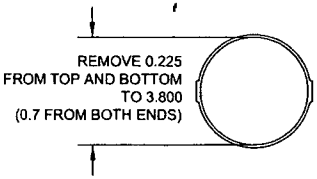


SECTION H-H 12 PL
SCALE 5X

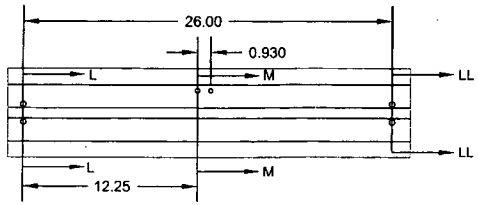


SECTION X-X
SCALE 5X

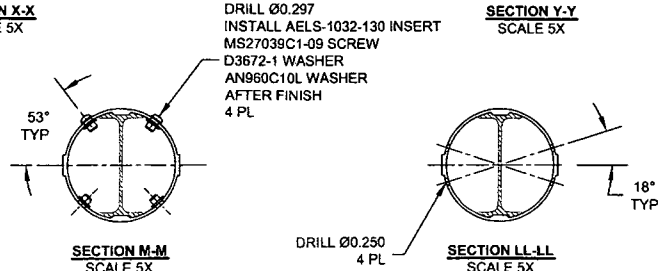
#713328



SECTION Y-Y
SCALE 5X



DETAIL E
SCALE NONE

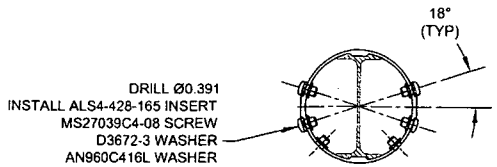


SECTION M-M
SCALE 5X

SECTION LL-LL
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



SECTION L-L
SCALE 5X

D3391-013 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DEO ATTACHED

RELEASED 08-04-05

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 5 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

Dart Aerospace Ltd

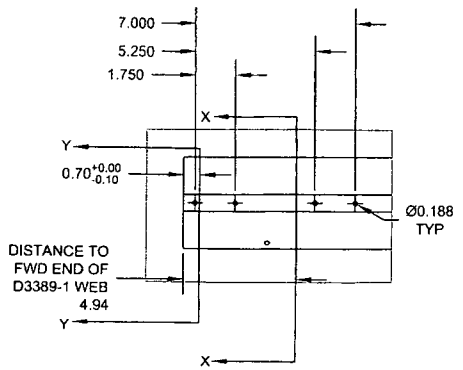
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

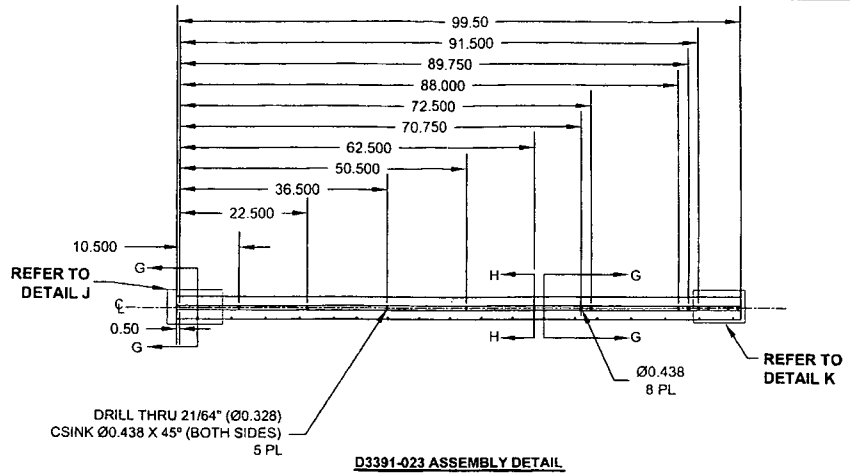
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

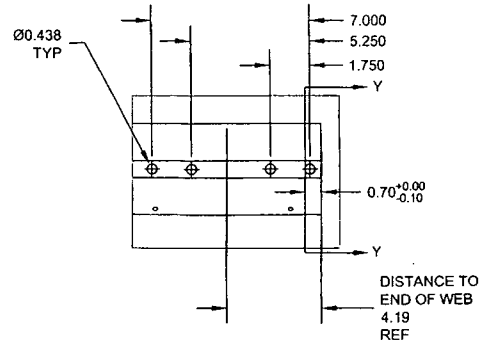
NOTE: Date & initial all entries



DETAIL J
SCALE 4X

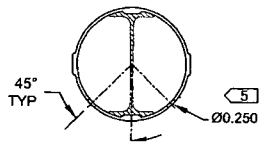


D3391-023 ASSEMBLY DETAIL

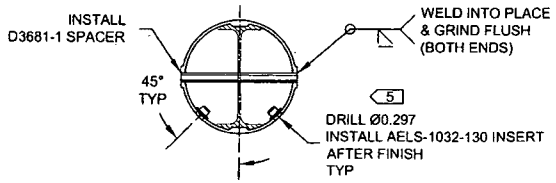


DETAIL K
SCALE 4X

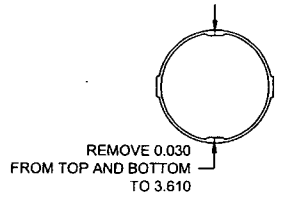
#71328



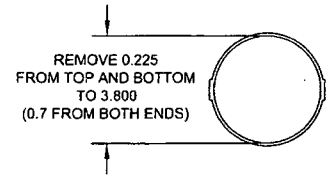
SECTION G-G
SCALE 5X



SECTION H-H 5 PL
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

DEO ATTACHED

RELEASED 08-09-05 KV

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 6 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

Dart Aerospace Ltd

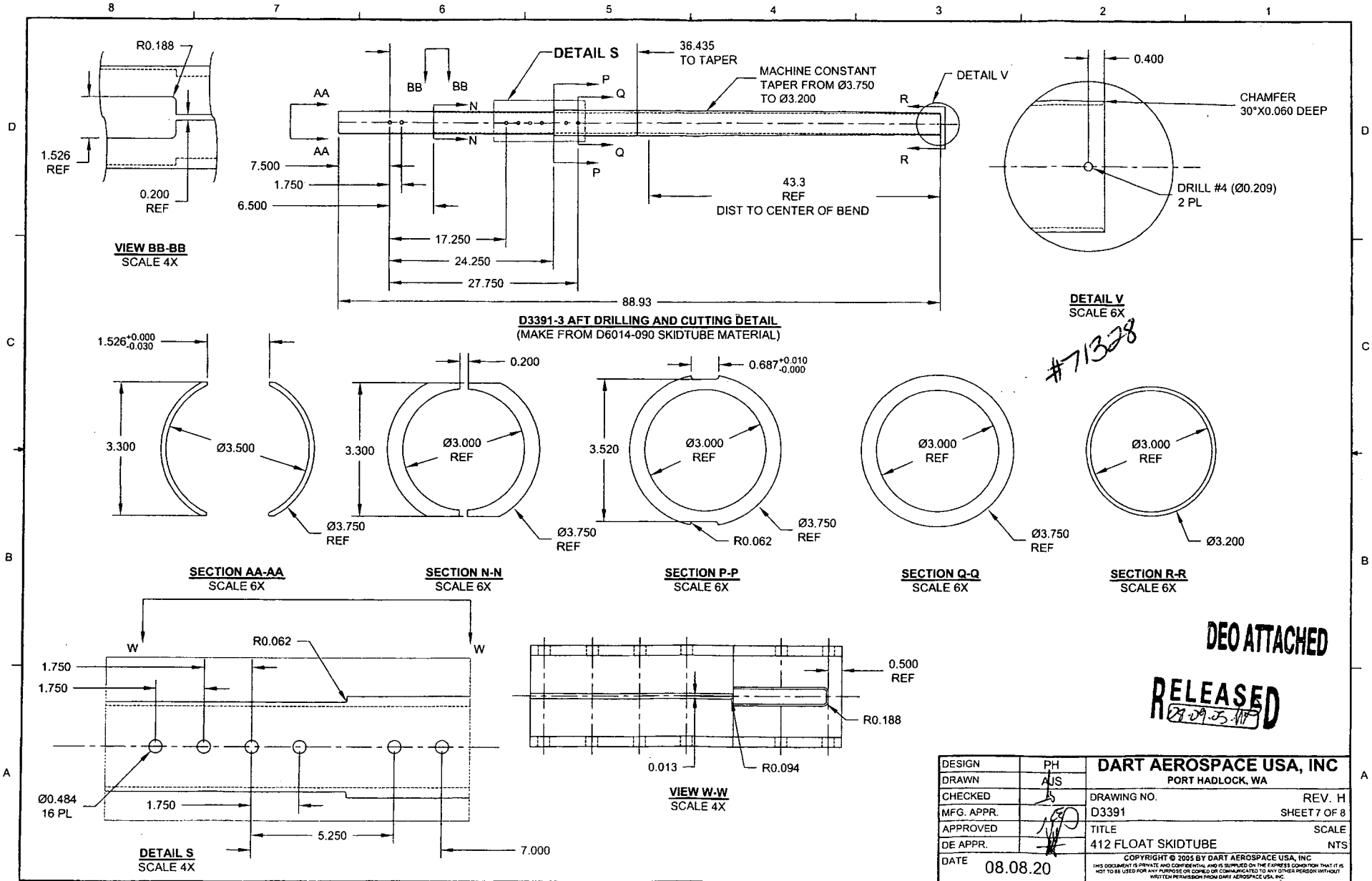
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries


R0.188
1.526 REF
0.200 REF
VIEW BB-BB
SCALE 4X
DETAIL S
36.435 TO TAPER
MACHINE CONSTANT TAPER FROM Ø3.750 TO Ø3.200
DETAIL V
AA
BB
N
P
Q
R
7.500
1.750
6.500
17.250
24.250
27.750
88.93
43.3 REF DIST TO CENTER OF BEND
D3391-3 AFT DRILLING AND CUTTING DETAIL
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)
0.400
CHAMFER 30°X0.060 DEEP
DRILL #4 (Ø0.209) 2 PL
DETAIL V
SCALE 6X
#71328
1.526 +0.000 -0.030
3.300
Ø3.500
Ø3.750 REF
0.200
Ø3.000 REF
0.687 +0.010 -0.000
3.520
R0.062
Ø3.200
SECTION AA-AA
SCALE 6X
SECTION N-N
SCALE 6X
SECTION P-P
SCALE 6X
SECTION Q-Q
SCALE 6X
SECTION R-R
SCALE 6X
W
R0.062
1.750
Ø0.484 16 PL
5.250
7.000
DETAIL S
SCALE 4X
0.500 REF
R0.188
0.013
R0.094
VIEW W-W
SCALE 4X
DEO ATTACHED
RELEASED
08-09-05-MP
DESIGN PH
DRAWN AJS
CHECKED
MFG. APPR.
APPROVED
DE APPR.
DATE 08.08.20
DART AEROSPACE USA, INC
PORT HADLOCK, WA
DRAWING NO. D3391
REV. H
SHEET 7 OF 8
TITLE 412 FLOAT SKIDTUBE
SCALE NTS
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Dart Aerospace Ltd

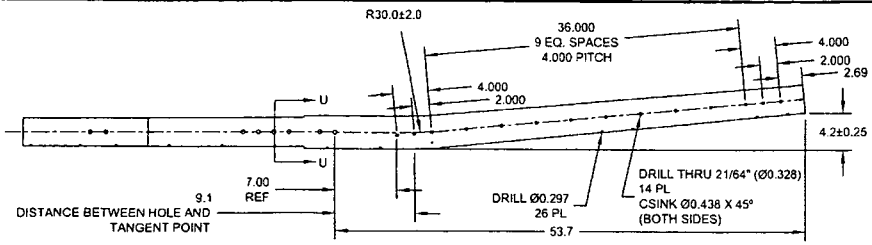
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

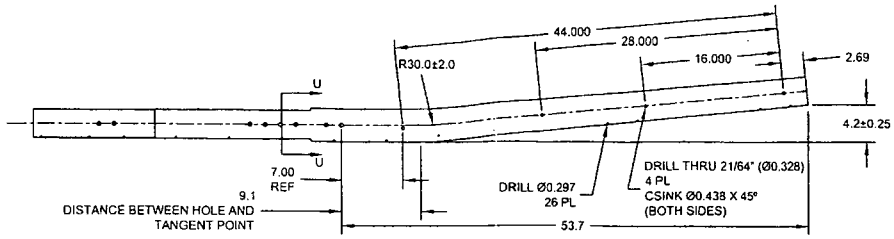
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

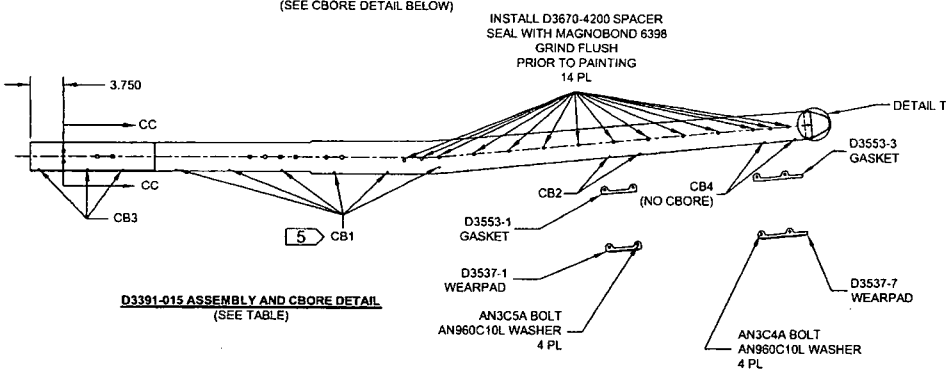
NOTE: Date & initial all entries



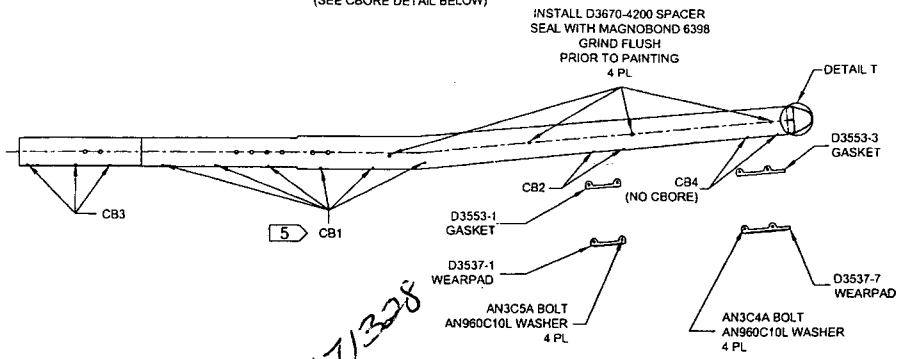
D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

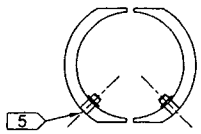


#71328

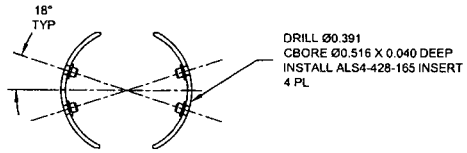
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

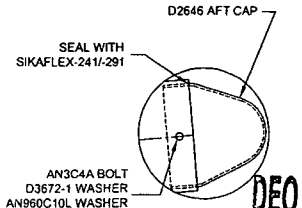
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X



DETAIL T
SCALE 4X

DEO ATTACHED

RELEASED 08.09.05

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 8 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO.	TITLE	REV. H	DART AEROSPACE USA, INC	D.E.O. NO.	SHEET NO.	SCALE
D3391	412 FLOAT SKIDTUBE		ENGINEERING ORDER	D3391-H-1	SHEET 1 OF 1	NTS
DRAWN	CHECKED		MFG. APPR.	APPROVED	DE APPR.	
DATE 09.09.23	DATE 04.09.24		DATE 09/09/25	DATE 09/09/30	DATE 09/09/30	

PURPOSE:
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

RELEASED
2010 -02- 02

CHANGE:
AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.~~ COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

#71328

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries